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REMARKS

Claims 1-33 are pending in the present application. Claims 8, 22, 32 and 33 have been canceled, Claims 1, 6, 9, 10, 11, 19, 20, 23, 24, and 25 have been amended, and Claims 34-42 have been added, leaving Claims 1-7, 11-21, 25-31 and 34-42 for consideration upon entry of the present Amendment.

Support for the amendments to Claim 1 can at least be found in Claims 1 and 10 as filed, as well as in the Specification on Page9, lines 5-7.

Support for the amendments to Claims 9 and 23 can be found in the Specification on Page9, lines 5-7.

Support for the amendment to Claim 19 can at least be found in Claims 19 and 24 as filed.

Claims 6, 10, 20 and 24 have been amended merely to correct their dependencies.

Claims 11 and 25 have been amended to correct a typographical error.

Support for new Claims 34 and 35 can be at least be found in the Specification on Page 7, lines 24-26.

Support for new Claim 36 can at least be found in the Specification on Page 7, lines 24-26.

Support for new Claims 37-42 can at least be found in Claims 6, 7, 11, 13, 14 and 15, respectively.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claim 33 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 33 has been cancelled, thus rendering the rejection moot. Withdrawal of the rejection is requested.

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Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-2, 4-9, 11-23 and 25-31 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,662,869 to Abe et al. (hereinafter "Abe"). Applicants respectfully traverse this rejection.

The present application teaches and claims a catalyzed adsorber for treating exhaust gas and a method for making the catalyzed adsorber. The catalyzed adsorber comprises a substrate, a zeolite underlayer disposed over the substrate; and a catalyst overlayer disposed over the underlayer, wherein the overlayer is zeolite free, wherein an overlayer non-catalyst loading is less than about 1.0 g/in^3, and wherein an overlayer catalyst loading is about 0.1 to about 0.5 g/in^3.

Abe discloses an exhaust gas purification system comprising an adsorbant (Abstract). The catalyst-adsorbant can comprise a layered structure with a first layer of zeolite and noble metal and a second layer of a composite oxide of Al_2O_3-CeO_2 with a noble metal coated on the first layer (Column 6, lines 40-47). The first layer containing the zeolite can have 5-40 g/ft^3 (0.0029 to 0.0232 g/in^3) of noble metal (Column 5, lines 63-64). The total amount of noble metal in the two layers is 20-130 g/ft^3.

The present claims are directed to a catalyzed adsorber having an overlayer catalyst loading of about 0.1 to about 0.5 g/in^3 , e.g., about 173 to about 864 g/ft^3, and non-catalyst loading of less than about 1.0 g/in^3. The adsorber of Abe has a maximum amount of noble metal of 130 g/ft^3, well below the amount presently claimed.

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Further, for an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Because Abe fails to disclose at least one element of the present claims, namely the presently claimed catalytic metal loading, Abe cannot anticipate or render the present claims obvious. In addition, Abe does not provide the motivation to increase the level of catalytic

metal above the disclosed levels.

For at least this reason, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(b) are requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claim 3 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Abe in view of EP 0 904 827 to Noda et al. (hereinafter "Noda 827"). Applicants respectfully traverse this rejection.

Noda 827 discloses a catalyst-adsorbant comprising a monolithic carrier, an adsorbant layer and a catalytic layer (Abstract). The adsorbant layer can comprise a zeolite (Page 5, line 16). The zeolite preferably comprises 5 to 150 g of noble metal per ft^3 of carrier (Page 5, line 40). The catalyst layer has a thickness of 10 to 120 micrometers and a catalyst loading of 10 to 250 g/ft^3 of monolithic carrier (Page 4, lines 45-46 and Page 6, line 1). Noda 827 does not disclose the non-catalyst loading of the catalytic layer.

In making the rejection, the Examiner states regarding the combination of Abe and Noda 827 that it would have been obvious "to include the catalyst overlayer having a thickness as described in Noda et al. in light of the advantages taught by the reference" (Paper 8, Page 5).

The present Application claims a two-layer adsorbant wherein an overlayer non-catalyst loading is less than about 1.0 g/in^3, and wherein an overlayer catalyst loading is about 0.1 to about 0.5 g/in^3. As discussed previously, Abe at least does not disclose a catalyst overlayer having the presently claimed combination of catalyst and non-catalyst loading. Noda 827 does not cure the defects of Abe regarding the combination of catalyst and non-catalyst loading of the catalyst overlayer. Noda 827 does not appear to disclose the non-catalyst loading of the catalyst overlayer. Noda 827 is concerned only with the catalyst loading and the thickness of the catalyst layer. There is no teaching in Noda 827 to suggest that the combination of catalyst and non-catalyst loading disclosed in Abe would be suitable to form a catalyst layer having the thickness disclosed in Noda 827. There is no teaching in Abe as to the layer thickness that can be achieved using the disclosed combination of catalyst and non-catalyst loading. Thus, there is no motivation in the references to use the layer

thickness of Noda 827 in the catalyst layer of Abe.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was make. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Abe discloses a catalyst layer having a specific catalyst and non-catalyst loading. Noda 827 discloses a different catalyst loading than Abe and a total thickness of the catalyst layer. Noda 827 does not disclose the non-catalyst loading in the catalyst layer. There is no motivation to use the layer thickness of Noda 827 in the catalyst layer of Abe as there is no teaching in the references to suggest that the layer thickness of Noda 827 would be compatible with the disclosed catalyst and non-catalyst loading of Abe. In addition, because neither reference teaches that the catalyst layer thickness of Noda 827 could be achieved with the combination of catalyst and non-catalyst loadings in Abe, there is no expectation of success for such a combination.

In order to arrive at the combination suggested by the Examiner, one would have to ignore the teachings of Abe regarding the combination of catalyst and non-catalyst loading of the catalyst layer, particularly the maximum catalyst loading of Abe of 130 g/ft^3 (no motivation, no expectation of success). One would then have to select the catalyst layer thickness of Noda 827 to use in the catalyst layer of Abe (picking and choosing, no motivation, no expectation of success). Accordingly, a prima facie case of obviousness has not been established in accordance with 35 U.S.C § 103(a). Abe and Noda 827 do not render the present claims obvious

Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) over Abe and Noda 827 are requested.

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Claims 10 and 24 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Abe in view of EP 0 748 774 to Noda et al. (hereinafter "Noda 774"). Applicants respectfully traverse this rejection.

Noda 774 discloses a system for exhaust gas purification. The system includes a hydrocarbon adsorber such as a zeolite (Page 7, lines 34-35). The zeolite preferably contains a precious metal (Page 7, lines 51-52). The adsorbant is disclosed as disposed upstream of a catalyst composition (Page 8, lines 16-17). The catalyst composition can comprise a precious metal in an amount of 30-250 g/ft^3 (Page 10, line 54). While Noda 774 states that the catalyst composition can also comprise an inorganic oxide, the non-catalyst loading of the catalyst layer is not disclosed (Page 10, lines 38-50).

In making the rejection, the Examiner states "It would have been obvious...to include the use of a catalyst overlayer having a catalyst overlay loading as described by Noda et al. in light of the advantages taught by the reference " and "Because both references describe a catalyst-adsorbent composition useful in the purification of exhaust gas one would have reasonable expectation of success for the combination" (Paper 8, Page 6). Applicants respectfully disagree.

As discussed above, while Abe appears to disclose a layered zeolite and catalyst, Abe does not disclose the presently claimed range of noble metal. The presently claimed range of noble metal is 1.3 to 2.6-fold greater than the maximum level disclosed in Abe. While Noda 774 appears to disclose a catalyst having a range of noble metal that overlaps the presently claimed range, Noda 774 does not disclose the non-catalyst loading in the catalyst composition. Applicants submit that there is no motivation or expectation of success for employing the catalyst loading of Noda 774 in the catalyst layer of Abe which has a specified catalyst and non-catalyst loading.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or

suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The catalyst adsorbers of Abe and the present claims have a two-layer construction with an underlayer comprising a zeolite and an overlayer comprising a catalytic metal. As described in Abe, the catalytic metal loading is optimized from "the view point of cost and regenerating ability" (Column 5, lines 63-65). Abe thus does not provide either the motivation or expectation of success for increasing the catalyst loading. Further, Noda 774 discloses that if the catalytic metal loading is too high, reduced dispersion and higher cost result (Page 10, line 57 - Page 11, line 1). Noda 774 thus does not provide the motivation to increase the catalyst loading in the adsorber of Abe for which the catalyst loading has already been optimized.

To make the combination suggested by the Examiner, one would first have to ignore the teachings of Abe regarding the suitable catalyst loading (no motivation, no expectation of success). One would then have to look to Noda 774, and select to use the catalyst loading of Noda 774 in the adsorber of Abe (picking and choosing, no motivation, no expectation of success). Accordingly, a prima facie case of obviousness has not been established in accordance with 35 U.S.C § 103(a). Abe and Noda 774 do not render the present claims obvious.

Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) over Abe and Noda 774 are requested.

New Claims

New Claims 34-42 have been added to further define the invention. New Claims 34 and 35 depending from Claims 1 and 19, respectively, have the limitation that the zeolite has a sodium content of less than 0.1 wt.% of the total weight of the zeolite. New Claim 36 and its dependent claims are directed to a catalyzed adsorber for treating exhaust gas, comprising a substrate, a zeolite underlayer disposed over the substrate, wherein the zeolite has a sodium content of less than 0.1 wt.% of the total weight of the zeolite and a catalyst overlayer disposed over the underlayer, wherein the overlayer is zeolite free, and wherein an overlayer

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non-catalyst loading is less than about 1.0 g/in^3. Applicants submit that none of the cited references teach a zeolite having a sodium content of less than 0.1 wt.%.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Cantor Colburn LLP.

Respectfully submitted,

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